

ROCKFALL MITIGATION IMPROVEMENTS

BOOTH ROAD

HONOLULU, OAHU, HAWAII



Carty Chang
E-signed 2016-08-02 05:12PM HST
carty.s.chang@hawaii.gov

CONSTRUCTION NOTES

1.

ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986," AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984," AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI AND HAWAII.
2.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS" AND CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.
3.

THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES, APPURTENANCES, AND STRUCTURES ARE BASED ON AVAILABLE RECORDS, VERIFIED WHENEVER POSSIBLE BY FIELD OBSERVATIONS. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES AND SHALL PROTECT SUCH UTILITIES AT ALL TIMES. DAMAGE TO EXISTING UTILITIES AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE. PROTECTION AGAINST INJURY TO PERSONNEL RESULTING FROM CONTACT WITH THE EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
4.

SHOULD HISTORIC REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATIONS OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL CORDON OFF THE AREA AND IMMEDIATELY NOTIFY THE PLANNING DEPARTMENT AT (808)241-4050 AND THE STATE HISTORIC PRESERVATION DIVISION AT (808)652-1510, WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND THE APPROPRIATE MITIGATION MEASURES, IF NECESSARY.
5.

THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
6.

THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION OR BETTER AT NO ADDITIONAL COST TO THE STATE, ALL IMPROVEMENTS AND NATURAL FEATURES DAMAGED DIRECTLY OR INDIRECTLY AS A RESULT OF THE PROJECT AND CONSTRUCTION, INCLUDING STREAMS, TRAILS, ETC. ANY RESTORATION TO HISTORIC ELEMENTS SHALL BE APPROVED BY THE ENGINEER.
7.

THE CONTRACTOR SHALL SUBMIT A STATEMENT OF WORK AND A HEALTH AND SAFETY PLAN SPECIFIC TO THIS PROJECT FOR THE ENGINEER'S APPROVAL PRIOR TO COMMENCING WORK. NO WORK SHALL COMMENCE WITHOUT AN APPROVED STATEMENT OF WORK AND A HEALTH AND SAFETY PLAN.
8.

NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE ROCKS, SOIL, OR DEBRIS IN ANY FORM TO FALL, SLIDE, OR FLOW INTO EXISTING DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS, OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY AT NO ADDITIONAL COST TO THE STATE.
9.

CONTRACTOR SHALL COORDINATE WITH THE STATE DLNR LAND DIVISION IN REGARDS TO VEHICLE PARKING, SITE ACCESS, AND STAGING OF MATERIALS AND EQUIPMENT DURING CONSTRUCTION. ANY DAMAGES TO THE EXISTING PROPERTIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE REPAIRED AND RESTORED TO THE ORIGINAL CONDITION OR BETTER AT THE CONTRACTOR'S EXPENSE.
10.

ALL REQUIRED ENVIRONMENTAL PERMITS SHALL BE PROVIDED BY THE STATE. ALL REQUIRED CONSTRUCTION PERMITS FOR THIS PROJECT SHALL BE OBTAINED BY THE CONTRACTOR AT HIS OWN COST.

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES

1.

THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
2.

THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
3.

THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
4.



THE CONTRACTOR SHALL APPLY AND PAY FOR ALL NECESSARY CONSTRUCTION PERMITS.
5.

THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES AT ALL TIMES DURING CONSTRUCTION, AND ANY DAMAGE TO THEM SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
6.

THE CONTRACTOR SHALL SUBMIT WITH THE BID DOCUMENTS A COPY OF THE PUBLIC SAFETY PLAN REFLECTING A DETAILED DESCRIPTION OF HOW PUBLIC SAFETY COULD BE AFFECTED AND DESCRIPTION OF METHODS USED BY THE CONTRACTOR TO SAFE GUARD THE PUBLIC AND SURROUNDING PROPERTIES AGAINST ROCKFALL HAZARDS DURING THE CONSTRUCTION WORK.

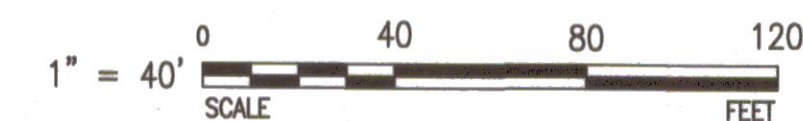
ABBREVIATIONS

APPROX.	APPROXIMATE
DWG	DRAWING
EPA	ENVIRONMENTAL PROTECTION AGENCY
E.W.	EACH WAY
EXIST	EXISTING
G	GRAMS
GPS	GLOBAL POSITIONING SYSTEM
HRS	HAWAII REVISED STATUTES
ID	IDENTIFICATION
M2	METERS SQUARED
MAX	MAXIMUM
MIN	MINIMUM
N	NORTH
NO	NUMBER
O.C.	ON CENTER
RD	ROAD
SHT	SHEET
TYP.	TYPICAL
W/	WITH

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
		STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION			
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.		ROCKFALL MITIGATION IMPROVEMENTS BOOTH ROAD HONOLULU, OAHU, HAWAII			
		GENERAL ROCKFALL MITIGATION NOTES			
DESIGNED: RMO		SUBMITTED:			
DRAWN: RMO		DATE: MAY 2016			
CHECKED: ARN		SCALE: AS NOTED			
APPROVED: 		Aug 2, 2016		DRAWING NO.	
Signature		Expiration Date of the License		C-1	



GENERAL SITE PLAN
SCALE: 1" = 40'



LEGEND

- PROPERTY LINES
- X— EXIST ROCKFALL IMPACT FENCE

NOTES:

1. THE INFORMATION PROVIDED ON PLANS IS BASED ON GPS FIELD MEASUREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR TAKING HIS/HER OWN MEASUREMENTS AND COORDINATING ANY DISCREPANCIES WITH THE ENGINEER PRIOR TO ORDERING ANY MATERIALS.
2. PLANS SHOW THE SCHEMATIC LOCATION OF THE EXISTING ROCKFALL IMPACT FENCE. ACTUAL ROCKFALL IMPACT FENCE LOCATION SHALL BE COORDINATED WITH THE ENGINEER IN THE FIELD.
3. PRIOR TO INSTALLATION OF VARIOUS CONTRACT ITEMS AND IMPROVEMENTS, CONTRACTOR SHALL PERFORM CLEARING WITHIN THE LIMITS SHOWN ON THIS PLAN INCLUDING ALL VEGETATION, DEBRIS, AND/OR ROCKS THAT ARE ON OR LEANING AGAINST THE EXISTING ROCKFALL IMPACT FENCE, WITHIN THE EROSION MATTING AREA, AND UP TO THE UPSLOPE TIEBACK ANCHORS. ALL VEGETATION SHALL BE CUT FLUSH AND REMOVED FROM THE SITE AND ALL DEBRIS SHALL BE CLEARED AND REMOVED FROM THE SITE. ALL LOOSE ROCKS WITHIN THE LIMITS OF CLEARING SHALL BE RELOCATED UPSLOPE OF THE EXISTING ROCKFALL IMPACT FENCE AT A LOCATION DETERMINED BY THE ENGINEER IN THE FIELD. CLEARING LIMITS SHOWN ON THIS PLAN ARE APPROXIMATE. COORDINATE ACTUAL LIMITS OF CLEARING WITH THE ENGINEER IN THE FIELD PRIOR TO STARTING WORK.
2. CONTRACTOR SHALL PROVIDE APPLICABLE BEST MANAGEMENT PRACTICES DURING CONSTRUCTION TO PREVENT ANY SILT AND OTHER POTENTIAL CONTAMINANTS FROM LEAVING THE PROJECT SITE. AS A MINIMUM REQUIREMENT, INSTALL AND MAINTAIN COMPOST FILTER SOCKS BELOW ANY DISTURBED AREA AS INDICATED ON THE PLANS.
3. ANY DAMAGE TO THE EXISTING ROCKFALL IMPACT FENCE SYSTEM AS A RESULT OF THE CONTRACTOR'S OPERATIONS SHALL BE RESTORED TO THE ORIGINAL CONDITION OR BETTER BY THE CONTRACTOR AND AT NO ADDITIONAL COST TO THE STATE.
4. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL NECESSARY PROTECTION MEANS INCLUDING BARRICADES, FENCES, AND OTHER SAFETY MEANS TO PROTECT THE PUBLIC AGAINST FALLING ROCKS AND DEBRIS DURING THEIR CONSTRUCTION OPERATION.
5. CONTRACTOR SHALL REMOVE ALL ROCKS, SOILS, AND OTHER DEBRIS THAT ARE OBSTRUCTING INSTALLATION OF THE IMPROVEMENTS AT NO ADDITIONAL COST TO THE STATE.

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<div><div><p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.</p><p>Signature: 4/30/18 Expiration Date of the License</p></div><div><p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p><p>ROCKFALL MITIGATION IMPROVEMENTS BOOTH ROAD HONOLULU, OAHU, HAWAII</p><p>GENERAL SITE PLAN</p><table border="1"><tr><td>DESIGNED: RMO</td><td>SUBMITTED:</td></tr><tr><td>DRAWN: RMO</td><td>DATE: MAY 2016</td></tr><tr><td>CHECKED: ARN</td><td>SCALE: AS NOTED</td></tr><tr><td>APPROVED: Carty Chang E-signed 2016-08-02 05:12PM HST carty.s.chang@hawaii.gov</td><td>DRAWING NO. C-2</td></tr></table><p>CHIEF ENGINEER</p></div></div>						DESIGNED: RMO	SUBMITTED:	DRAWN: RMO	DATE: MAY 2016	CHECKED: ARN	SCALE: AS NOTED	APPROVED: Carty Chang E-signed 2016-08-02 05:12PM HST carty.s.chang@hawaii.gov	DRAWING NO. C-2
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APPROVED: Carty Chang E-signed 2016-08-02 05:12PM HST carty.s.chang@hawaii.gov	DRAWING NO. C-2												



SITE PLAN
SCALE: 1" = 20'



LEGEND

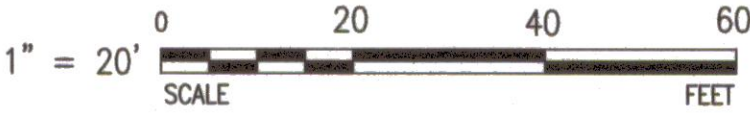
- PROPERTY LINES
- EXIST ROCKFALL IMPACT FENCE
- 1 EXIST FENCE POST W/EROSION CONTROL MAT & POST ID

ROCKFALL FENCE REPAIR SCHEDULE					
POST ID	NEW PARTS & MATERIALS*				SPECIAL MITIGATION
	3/4" CLIPS	5/8" CLIPS	1/2" CLIPS	EROSION CONTROL MAT	
1	16	8	4	YES	TIGHTEN LATERAL CABLES. SEE NOTE 3
2	—	4	8	YES	—
3	—	4	8	YES	—
4	—	4	8	YES	EXPOSE BURIED BREAKING ELEMENT AND ANCHOR
5	—	4	8	YES	—
6	16	8	4	YES	TIGHTEN LATERAL CABLES. SEE NOTE 3

*- SEE NOTE 4 BELOW

NOTE:

- SEE SHEET C-4 FOR DETAILS.
- PRIOR TO INSTALLATION OF VARIOUS CONTRACT ITEMS AND IMPROVEMENTS, CONTRACTOR SHALL PERFORM CLEARING WITHIN THE LIMITS SHOWN ON THIS PLAN INCLUDING ALL VEGETATION, DEBRIS, AND/OR ROCKS THAT ARE ON OR LEANING AGAINST THE EXISTING ROCKFALL IMPACT FENCE, WITHIN THE EROSION MATTING AREA, AND UP TO THE UPSLOPE TIEBACK ANCHORS. ALL VEGETATION SHALL BE CUT FLUSH AND REMOVED FROM THE SITE AND ALL DEBRIS SHALL BE CLEARED AND REMOVED FROM THE SITE. ALL LOOSE ROCKS WITHIN THE LIMITS OF CLEARING SHALL BE RELOCATED UPSLOPE OF THE EXISTING ROCKFALL IMPACT FENCE AT A LOCATION DETERMINED BY THE ENGINEER IN THE FIELD. CLEARING LIMITS SHOWN ON THIS PLAN ARE APPROXIMATE. COORDINATE ACTUAL LIMITS OF CLEARING WITH THE ENGINEER IN THE FIELD PRIOR TO STARTING WORK.
- TREES WITH A TRUNK DIAMETER EQUAL TO OR LESS THAN 18 INCHES SHALL BE CUT FLUSH WITH THE GROUND. TREES WITH A DIAMETER LARGER THAN 18 INCHES SHALL BE COORDINATED WITH THE ENGINEER.
- CONTRACTOR SHALL REMOVE AND REPLACE EXISTING WIRE ROPE CLIPS AND TIGHTEN THE EXISTING LATERAL CABLES AT BOTH END POSTS TO REMOVE SLACK AND ALLOW FOR SLIGHT TENSION AS ACCEPTABLE TO THE ENGINEER. IF THE ENGINEER DETERMINES THAT THE EXISTING WIRE ROPE IS NOT SUITABLE FOR USE UPON REMOVAL OF EXISTING WIRE ROPE CLIPS, THE CONTRACTOR SHALL PROVIDE FOR ADDITIONAL SECTION(S) OF NEW WIRE ROPE TO MEET THE EXISTING WIRE ROPE SPECIFICATIONS.
- PRIOR TO ORDERING OF ANY MATERIAL IDENTIFIED IN THESE DOCUMENTS, THE CONTRACTOR SHALL CONFIRM ALL SIZES AND DIMENSIONS AND NOTIFY THE ENGINEER IN WRITING IN CASE OF ANY DISCREPANCIES.
- ALL MISCELLANEOUS METALS SHALL BE HOT-DIPPED GALVANIZED.



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